

C2 7. (Thrice Amended) The liner of claim 6, wherein said surfacer layer comprises a polyurethane foam.

23. (Amended) The liner of claim 6, wherein said barrier layer has a cure rate of less than about 60 seconds.

C3 24. (Amended) The liner of claim 6, wherein said barrier layer has a thickness of less than about 80 mils.

A marked up version of the amended claims is attached for the Examiner's review.

Please add new claims 29-36 as follows:

29. A bi-layer liner having only two layers comprising:

a surfacer layer and a barrier layer, said surfacer layer being disposed on a surface being lined, said barrier layer disposed on said surfacer layer, said barrier layer being the outermost layer from said surface being lined;

cf wherein said surfacer layer comprises a foam and said barrier layer comprises a polyurea and isocyanate blend.

30. The liner of claim 29, wherein said surfacer layer comprises a polyurethane foam.

31. The liner of claim 29, wherein said barrier layer has a cure rate of less than about 60 seconds.

32. The liner of claim 29, wherein said barrier layer has a thickness of less than about 80 mils.

33. A multi-layer liner for lining concrete structures having only three layers comprising:

a first barrier layer disposed on a surface being lined;

a surfacer layer disposed on said first barrier layer;

a second barrier layer disposed on said surfacer layer, said second barrier layer being the outermost layer from said surface being lined;

wherein said surfacer layer comprises a foam; and

wherein said first barrier layer and said second barrier layer are composed of a polyurea and isocyanate blend.

34. The liner of claim 33, wherein said surfacer layer comprises a polyurethane foam.

35. The liner of claim 33, wherein said first barrier layer and said second barrier layer have cure rates of less than about 60 seconds.

36. The liner of claim 33, wherein said first barrier layer and said second barrier layer each have a thickness of less than about 80 mils.

Please cancel claims 3, 4, 13, 18-22, and 25-28.

REJECTIONS

35 USC § 102

The Examiner rejected claims 3 and 22 under 35 USC § 102(b) as being anticipated by U.S. Patent No. 3,844,527 (Scott). Further, the Examiner:

1. Rejected claim 3 under 35 USC § 102(b) as being anticipated by U.S. Patent No. 4,426,817 (Bomhard);

2. Rejected claim 3 under 35 USC § 102(b) as being anticipated by U.S. Patent No. 5,098,059 (Sawyer);

3. Rejected claims 3 and 23 under USC § 102(b) as being anticipated by U.S. Patent No. 5,618,616 (Hume, et al.); and

4. Rejected claims 3 and 24 under USC § 102(b) as being anticipated by U.S. Patent No. 4,217,383 (Patterson, et al.).

35 USC § 103

The Examiner rejected claims 4, 13, 23, 25 and 28 under 35 USC § 103(a) as being unpatentable over Scott in view of U.S. Patent No. 5,283,299 (Tramontano, et al.). Further, the Examiner:

1. Rejected claims 4 and 23 under 35 USC § 103(a) as being unpatentable over Bomhard in view of Tramontano et al.;

2. Rejected claims 4, 13, 23, 25, 27 and 28 under 35 USC § 103(a) as being unpatentable over Sawyer in view of Tramontano, et al.;

3. Rejected claims 4, 13 and 25-28 under 35 USC § 103(a) as being unpatentable over Hume et al. in view of Tramontano, et al.

ARGUMENTS

The Examiner allowed claim 6 and indicated that claim 7 would be allowable if amended. For the Examiner's convenience, claim 6 has been amended to read as an independent claim and claim 7 has been amended to comply with the Examiner's objection.

Further, claims 23 and 24 have been amended such that they now depend upon allowed claim 6. As a result, applicant respectfully submits that amended claims 6, 7, 23 and 24 are allowable.

Applicant has cancelled previous claims 3, 4, 13, 18-22 and 25-28, and provided new allowable claims 29-36.

New Claims 29-32

The Examiner's attention is respectfully drawn to newly added independent claim 29. The following arguments in support of claim 29 and its dependent claims are intended to provide the Examiner with clarification of the novel and non-obvious nature of these newly added claims.

Hume, the only reference cited by the Examiner disclosing the use of a polyurea and isocyanate blend as claimed by claim 29, has patented a multi-layered liner that comprises: (1) a primer layer, (2) a first moisture barrier layer, (3) a second moisture barrier layer, and (4) an intermediate foam layer sandwiched between the first barrier layer and the second barrier layer.

In contrast, newly added independent claim 29 provides that the surfacer layer is the layer that is disposed against the surface being lined. Independent claim 29 also provides that the barrier layer is the outermost layer from the surface being lined and that the barrier layer is disposed on the surfacer layer. Claim 29 defines a liner that can only have two layers because the surfacer layer is applied to the lined surface, and the barrier layer applied to the surfacer layer is the outermost layer of the liner from the lined surface. Accordingly, independent claim 29 cannot apply to a situation where a primer layer is applied to the lined surface before the surfacer and barrier layers, as required by the Hume reference. Further, claim 29 cannot apply to a situation where there is a first moisture barrier applied before the surfacer and barrier layers. Likewise, claim 29 does not apply if there is both a primer and a first moisture barrier applied before the surfacer and barrier layers.

Furthermore, because independent claim 29 defines that the barrier layer is applied to the surfacer layer, a liner with any layers between the surfacer layer and the barrier layer is not covered

by claim 29. In short, claim 29 precludes the use of the primer layer and the first moisture barrier of the Hume patent.

Furthermore, in the preamble of independent claim 29, applicant has provided the limitation that the liner is one having "only two layers." This additional element also negates the possibility of layers having more than two layers reading on claim 29.

In light of the above, applicant respectfully requests that newly added claims 29-32 be allowed.

New Claims 33-36

The Examiner's attention is respectfully drawn to new claims 33-36 and, in particular, to newly added independent claim 33. Again, the following is offered to provide the Examiner with clarification of the novel and non-obvious nature of these newly added claims.

New claim 33 provides for a first barrier layer, a surfacer layer, and a second barrier layer. The first barrier layer of new claim 33 is the layer that is disposed against the surface being lined, and the surfacer layer is disposed on the first barrier layer. Claim 33 also provides that the second barrier layer is the outermost layer from the surface being lined and that the second barrier layer is disposed on the surfacer layer.

Thus, new claim 33 defines a liner that can only have three layers because the first barrier layer is applied to the lined surface, the surfacer layer is applied to the first barrier layer, and the

second barrier layer applied to the surfacer layer is the outermost layer of the liner from the lined surface. As a result, newly added claim 33 cannot apply to a liner having four or more layers, as required by Hume. Furthermore, in the preamble of claim 33, applicant has provided the limitation that the liner is one having “only three layers.” This additional element negates the possibility of liners having more than three layers reading on claim 33. Because claim 33 precludes the use of either the primer layer or the first moisture barrier of the Hume patent, applicant’s invention is distinct from Hume and was neither patented nor described by Hume.

Furthermore, the Hume patent states that the primer layer is applied to the substrate “to a necessary thickness to ensure adhesion of the first moisture barrier to the substrate...” (see Hume column 2, lines 56-58). Therefore, the Hume patent teaches that the primer is essential to the application of the liner as a bonding element between the liner and the surface being lined. As mentioned in both the Hume patent and in the present application, previously used water impermeable liners, whether composed of epoxy, acrylic, polyurethane, or resin impregnated substrates, are not strongly held to the substrate and tend to delaminate over time. (See Hume, column 3, lines 55-59, and Hume application Serial No. 09/532,400, page 5.) In light of the teachings and prior art available to the applicant at the time of the invention, the removal of an essential element for bonding the liner to the substrate surface is not an obvious improvement under 35 USC § 103.

The Hume patent has limited itself to a liner that requires a primer, a first barrier layer, an intermediate foam layer, and a second layer. The step taken by the present application would not be